

Claims

- [c1] 1. A rack serving unit having:
- a) a carriage which may be moved along a rack aisle by means of a drive on at least one substantially horizontal carrying rail;
 - b) a lifting platform which is carried along by the carriage for the purpose of receiving the warehouse goods;
 - c) a lifting device by means of which the lifting platform may be moved in the vertical direction with respect to the carriage;
 - d) a stabilising device which prevents the lifting platform from swinging out laterally, characterised in that
 - e) the lifting device for the lifting platform comprises at least two traction mechanisms on which the lifting platform is suspended from the carriage
 - f) the stabilising device comprises:
 - fa) at least one guide element which extends substantially horizontally parallel to the translatory movement path of the lifting platform and with which the lifting platform is in constant engagement in such a way that its position in the direction of the translatory movement is constantly defined; and
 - fb) provided at both ends of the translatory movement

path of the lifting platform there is a lifting device or each guide element which is connected to the guide element and is constructed in such a way that the guide element moves synchronously with the lifting platform in the vertical direction in substantially horizontal alignment.

- [c2] 2. A rack serving unit according to Claim 1, characterised in that the lifting platform is in engagement with the guide element by way of at least one clamp-roller drive having two clamp rollers which abut under pressure against opposite faces of the guide element and of which at least one may be driven such that the lifting platform executes a translatory movement synchronously with the carriage
- [c3] 3. A rack serving unit according to Claim 2, characterised in that the guide element is a flat belt.
- [c4] 4. A rack serving unit according to Claim 2, characterised in that the guide element is a cable.
- [c5] 5. A rack serving unit according to Claim 4, characterised in that at least one clamp roller has a groove for receiving the cable.
- [c6] 6. A rack serving unit according to Claim 1, characterised in that the guide element is a cable which extends from

one lifting device to the other lifting device and, between the lifting devices, is wound with frictional fit around a driven cable drum carried by the lifting platform.

[c7] 7. A rack serving unit according to Claim 1, characterised in that the guide element comprises two cables which each extend to the lifting platform from one of the two lifting devices associated with the guide element and may each be wound onto a driven cable drum in such a way that the lifting platform executes a translatory movement synchronously with the carriage and both cables are constantly taut.

[c8] 8. A rack serving unit according to Claim 1, characterised in that the lifting devices for the guide element comprise a continuous belt having a vertically extending strand to which a respective end of the guide element is fixed.

[c9] 9. A rack serving unit according to Claim 8, characterised in that the continuous belt may be driven.

[c10] 10. A rack serving unit according to Claim 8, characterised in that at least the vertically extending strand if the continuous belt is arranged within a vertically extending guide profile and is connected to the associated end of the guide element by way of a connecting device which has at least one guide roller the guide roller

rolling along an inner face of the guide profile

- [c11] 11. A rack serving unit according to Claim 1, characterised in that two guide elements extending parallel to one another are provided, which may be moved vertically such that they are synchronous with one another and with the lifting platform
- [c12] 12. A rack serving unit according to Claim 1, characterised in that the traction mechanisms on which the lifting platform is suspended from the carriage are flexible, in particular cables, belts or chains.